

DETAILED ACTION

Response to Arguments

Applicant's arguments/remarks, filed on 3/1/10, have been fully considered. Applicants amendments have caused removal of the previously relied upon prior art rejection of claims 1-3, 5 and 15-25 to Fujita et al. (US 2003/0176576).

Applicants amendments have caused the previously relied upon 102(b) rejection of claims 1-17, 19, 20, 22 and 25 to Komitsu et al. (US Pat. 6,642,309) and the 103(a) rejection of claims 18 and 21 (Komitsu et al. in view of Kusakabe et al. (US Pat. 5,986,014) to be withdrawn. However, Applicants amendments have caused the grounds of rejection to change. Currently, all of the instant claims are rejected under 35 U.S.C. 103(a) (Komitsu et al. in view of Kusakabe et al.).

Applicants argue that Komitsu et al. exemplifies vinyl polymers with molecular weights of 12,100 or smaller (which fall outside the minimum requirement that the vinyl polymer have a molecular weight of greater than 20,000). However, Komitsu et al. clearly teaches that the vinyl polymers may have molecular weights of up to 100,000 (7:55-59), which satisfies Applicants molecular weight requirements. The fact that Komitsu et al. does not exemplify Applicants claimed molecular weight does not remove Komitsu et al. as a valid prior art reference. A reference may be relied upon for all that it teaches, including non-preferred embodiments.

Specification

Table 1 of the instant specification is objected to because of an alleged error. Table 1 recites the heading "Comparative Example". However, Table 1 is believed to contain the compositions according to the instant invention and should be amended to --Example--.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 5-14, 19, 20, 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komitsu et al. (US Pat. 6,642,309) in view of Kusakabe et al. (US Pat. 5,986,014).

Claims 1 and 5-14: Example 1 of Table 2 of Komitsu et al. teaches a blend of a silane-capped polyoxypropylene and a vinyl polymer. The vinyl polymer is a mix of 82% butyl acrylate, 2.3% methyl methacrylate and 15.7% stearyl methacrylate/octadecyl methacrylate (Table 1, example of synthesis 4). This vinyl copolymer blend satisfies all of the amount requirements of instant claims 5-11 and is comprised of the species of monomers of instant

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claims 12-14. The silyl-functionalized polymer prepared in synthesis 4 is prepared using Technique 1 of Komitsu et al., in which the acrylate-based monomers are copolymerized with a compound containing a polymerizable unsaturated bond and a reactive silyl group (8:15-19). In the same paragraph, Komitsu et al. teaches that technique 3 may be employed, which is a process where the acrylate copolymers are prepared in the presence of a chain transfer agent which bears a reactive silyl group (8:27-31). Komitsu et al. further teaches that technique 5 may be employed, which is a process where the acrylate polymer, which is prepared by a living radical polymerization method, is reacted with a reactive silyl group compound into the molecular terminus of the copolymer (8:34-38). Therefore, employment of either of techniques 3 or 5 as applied to synthesis examples 3-5 of Komitsu et al. would yield a vinyl polymer having crosslinkable silyl groups at the polymer terminus.

Komitsu et al. teaches curable compositions which satisfy instant claim 1, as described above. While Komitsu et al. does not explicitly teach that the crosslinkable silyl-group-containing acrylate polymers are prepared via atom transfer radical polymerization (ATRP), such a process is rendered obvious in view of Kusakabe et al. Specifically, Komitsu et al. recites JP-09272714, to Kusakabe et al., as a process which is suitable to prepare the acrylate-based copolymers using technique 5, as described therein (9:48-50). US Pat. 5,986,014 is the US equivalent of JP-09272714. Specifically, Kusakabe et al. explicitly teaches preparation of (meth)acrylic polymers prepared via ATRP (2:19-30), therefore, a person having ordinary skill in the art would have found such a process obvious for preparing the vinyl polymers of Komitsu et al. Further, the use of ATRP leads to polymers having very low polydispersities (usually less than 1.5); low polydispersities is well-known to improve the handling and workability of the

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curable compositions such as those taught by Komitsu et al. and Kusakabe et al. Therefore, employment of ATRP as the radical polymerization method for technique 5 is believed to inherently satisfy the polydispersity requirements of instant claim 18.

Claim 2: The polyether polymer is taught to preferably have a molecular weight of not less than 10,000 (5:54-59) and exemplifies a polyoxypropylene having a molecular weight of 19,000.

Claims 19 and 20: Komitsu et al. exemplifies the use of silyl-capped oxypropylene polymers, thereby satisfying claims 19 and 20.

Claim 22: Komitsu et al. teaches that the vinyl polymer (II) has crosslinkable silyl groups at the polymer terminus (synthesis examples 3-5 coupled with techniques 3 and 5).

Claim 25: Komitsu et al. teaches formed bodies prepared from the composition of instant claim 1 (15:18-39).

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komitsu et al. (US Pat. 6,642,309) in view of Kusakabe et al. (US Pat. 5,986,014) as applied to claim 1, further in view of Fujita et al. (US 2003/0176576, cited as an 'X' reference on the international search report).

Claims 23 and 24: Komitsu et al. in view of Kusakabe et al. render obvious the curable composition of instant claim 1, as described above. While Komitsu et al. does not explicitly teach that the vinyl polymer (II) has an alkenyl group as the crosslinkable functional group at the polymer terminus, Fujita et al. teaches that vinyl polymers which bear alkenyl groups as functional groups (paragraphs 0163-0180) may be used in substantially similar polymer compositions which are used for the same end uses as those taught in Komitsu et al.

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Additionally, Komitsu et al. teaches that when such alkenyl groups are used as the crosslinking group, it is preferred to additionally add a hydrosilyl group-containing compound (paragraphs 0352-0362). Komitsu et al. and Fujita et al. are combinable because they are from the same field of endeavor, namely curable resin compositions which are blends of silyl-terminated polyether polymers and poly(meth)acrylate copolymers with identical end uses (sealants, adhesives, etc-paragraph 0433 of Fujita et al. and 15:18-39 of Komitsu et al.). At the time of the invention, a person having ordinary skill in the art would have found it obvious to employ vinyl polymers which possess alkenyl crosslinkable groups and would have been motivated to do so since Komitsu et al. teaches that such crosslinkable groups, in addition to crosslinkable silyl groups, may be employed so as to adapt to an intended use/purpose (paragraph 0149).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571) 270-3298. The examiner can normally be reached on Monday through Friday from 5:30 AM to 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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/R. L./

Examiner, Art Unit 1796

29-Mar-10

/RANDY GULAKOWSKI/

Supervisory Patent Examiner, Art Unit 1796